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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/568,752	Applicant(s) NITTA ET AL.
	Examiner ABIGAIL FISHER	Art Unit 1616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If no period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133).

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on ____.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-9 is/are pending in the application.
 - 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) Claim(s) ____ is/are allowed.
- 6) Claim(s) 1-9 is/are rejected.
- 7) Claim(s) ____ is/are objected to.
- 8) Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on ____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. ____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)

Paper No(s)/Mail Date 2/21/06, 4/11/07
- 4) Interview Summary (PTO-413)

Paper No(s)/Mail Date. ____.
- 5) Notice of Informal Patent Application
- 6) Other: ____.

DETAILED ACTION

Claims 1-9 are pending.

Priority

Receipt is acknowledged of a certified copy of the priority document *in this National Stage application from the International Bureau* submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

The information disclosure statements (IDS) submitted on 2/21/06 and 4/11/07 were considered by the examiner.

Claim Warning

Applicant is advised that should claims 3-5 be found allowable, claims 6-8 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

The only difference between claims 3-5 and 6-8 is the recitation of fiber (claims 3-5) and fabric (claims 6-8). Neither the claims nor the specification recite a difference between fiber and fabric and the examiner interprets these terms to mean the same

thing as fiber is another name for fabric. Therefore, the two claims are so close in content that they both cover the same thing.

Claim Objections

Claim 9 is objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim should refer to other claims in the alternative only. See MPEP § 608.01(n). Accordingly, the claim 9 has not been further treated on the merits.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-9 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.

The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The specification discloses chemicals, such as N-(3,4,5,6-tetrahydrophthalimido)methyl (1R)-cis/trans-chrysanthemate, 5-benzyl-3-furylmethyl-

cis/trans-chrysanthemate, 3-phenoxybenzyl (1R)-cis/trans-chrysanthemate, 3-phenoxybenzyl (1RS)-cis/trans-3-2,2-dichlorovinyl-2,2-dimethylcyclopropanecarboxylate, (RS)- α -cyano-3-phenoxybenzyl (1R)-cis/trans-chrysanthemate, (S)-2-methyl-4-oxo-3-(2-propynyl)-2-cyclopentenyl (1R)-cis/trans-chrysanthemate which meet the written description and enablement provisions of 35 USC 112, first paragraph. However, claim(s) 1-9 recite any organic ester with a vapor pressure less than 10^{-3} Pa or less with behavior disturbing inducing action. None of these organic meet the written description provision of 35 USC § 112, first paragraph, due to lacking chemical structural information for what they are and chemical structures are highly variant and encompass a myriad of possibilities. The specification provides insufficient written description to support the genus encompassed by the claim. **Note: MPEP 2163.**

Vas-Cath Inc. v. Mahurkar, 19 USPQ2d 1111, (Fed. Cir. 1991), makes clear that "applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the *invention*. The invention is, for purposes of the 'written description' inquiry, *whatever is now claimed*." (See page 1117.) The specification does not "clearly allow persons of ordinary skill in the art to recognize that [he or she] invented what is claimed." (See Vas-Cath at page 1116.)

Univ. of Rochester v. G.D. Searle, 69 USPQ2d 1886, 1892 (CAFC 2004), further supports this by stating that:

The appearance of mere indistinct words in a specification or a claim, even an original claim, does not necessarily satisfy that requirement. A description of an anti-inflammatory steroid, i.e., a steroid (a generic structural term) described even in terms of its functioning of lessening inflammation of tissues fails to distinguish any steroid from others having the same activity or function. A description of what a material does, rather than of what it is, usually does not suffice.... The disclosure must allow one skilled in the art to visualize or recognize the identity of the subject matter purportedly described. (Emphasis added).

With the exception of the above specifically disclosed chemical structures, the skilled artisan cannot envision the detailed chemical structure of the encompassed organic esters regardless of the complexity or simplicity of the method of isolation. Adequate written description requires more than a mere statement that it is part of the invention and reference to a potential method for isolating it. The chemical structure itself is required. See Fiers v. Revel, 25 USPQ2d 1601, 1606 (Fed. Cir. 1993) and Amgen Inc. V. Chugai Pharmaceutical Co. Ltd., 18 USPQ2d 1016, (Fed. Cir. 1991). In Fiddes v. Baird, 30 USPQ2d 1481, 1483, (Bd. Pat. App. & Int. 1993), claims directed to mammalian FGF's were found unpatentable due to lack of written description for the broad class. The specification provided only the bovine sequence. Finally, University of California v. Eli Lilly and Co., 43 USPQ2d 1398, 1404, 1405 (Fed. Cir. 1997) held that:

...To fulfill the written description requirement, a patent specification must describe an invention and do so in sufficient detail that one skilled in the art can clearly conclude that "the inventor invented the claimed invention." Lockwood v. American Airlines, Inc., 107 F.3d 1565, 1572, 41 USPQ2d 1961, 1966 (Fed. Cir. 1997); In re Gosteli, 872 F.2d 1008, 1012, 10 USPQ2d 1614, 1618 (Fed. Cir. 1989) ("[T]he description must clearly allow persons of ordinary skill in the art to recognize that [the inventor] invented what is claimed."). Thus, an applicant complies with the written description requirement "by describing the invention, with all its claimed limitations, not that which makes it obvious," and by using "such descriptive means as words, structures, figures, diagrams, formulas, etc., that set forth the claimed invention." Lockwood, 107 F.3d at 1572, 41 USPQ2d at 1966.

Furthermore, to the extent that a functional description can meet the requirement for an adequate written description, it can do so only in accordance with PTO guidelines stating that the requirement can be met by disclosing "sufficiently detailed, relevant identifying characteristics," including "functional characteristics when coupled with a known or disclosed correlation between function and structure." Univ. of Rochester v. G.D. Searle, 68 USPQ2d 1424, 1432 (DC WNY 2003).

Clearly, the applicant is in possession of chrysanthemate compounds, as five of the six organic esters described are chrysanthemate compounds. However, the description of two types of compounds, chrysanthemate and a carboxylate does not describe with sufficient detail organic esters possessing the claimed vapor pressure and

behavior disturbing action.

Therefore, only the above chemically structurally defined chemicals, but not the full breadth of the claim(s) meet the written description provision of 35 USC § 112, first paragraph. The species specifically disclosed are not representative of the genus because the genus is highly variant. Applicant is reminded that Vas-Cath makes clear that the written description provision of 35 USC § 112 is severable from its enablement provision. (See page 1115.)

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 as currently written is vague and indefinite. The claim recites an organic ester compound having a vapor pressure of 10^3 Pa (25°C) "order" or less. It is unclear what the term "order" means in this context. It is not units as Pa is the units for the vapor pressure. The examiner is unsure if it is a typo.

Claims 2-9 are included in the rejection as they depend on a rejected base claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3, 6 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Long (WO 03057950).

Long exemplify (page 5) a formulation comprising an antimicrobial and a pesticide. The pesticide is SMITE EC-10 which contains Permethrin (page 4). Permethrin is 3-phenoxybenzyl (1RS)-cis/trans-3-2,2-dichlorovinyl-2,2-dimethylcyclopropanecarboxylate (which is disclosed on page 5 of the instant specification). This solution is then topically applied to carpet or upholstery (page 5) which would produce a fabric or fiber containing the solution.

Claims 1-4, 6-7 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Marrs (EP 382382, cited on PTO Form 1449).

Marrs exemplify a formulation comprising Permethrin, Triton X100 (a nonionic surfactant) and polystyrene (a resin) (example 7). Nylon samples are treated with the composition. The two polymeric substances claimed are polystyrene or shellac (claim 5) which are both resins.

Claims 1, 3-4, 6-7 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Samson et al. (US Patent No. 5252387).

Samson et al. exemplify (column 3) a formulation comprising Permethrin, polyvinyl chloride polymer (resin binder) as well as formaldehyde resin methylcellulose and acrylic copolymer which both read on the instantly claimed resin. The formulation is

coated on tent fabric. Various coatings and/or films such as acrylic, urethane and aluminum foil have been applied to the outer surface of the permethrin treated samples of tent fabric for evaluation (column 4, lines 35-45).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Applicant Claims
2. Determining the scope and contents of the prior art.
3. Ascertaining the differences between the prior art and the claims at issue, and resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1 and 3-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sasada et al. (JP 2003105674, cited on PTO Form 1449).

Applicant Claims

The instant application claims an insect pest behavior disturbance inducer which comprises an organic ester (such as Permethrin).

The instant application claims a fiber or fabric which holds the insect pest disturbance inducer.

The instant application claims the inducer is held by a resin binder and a specific resin binder claimed comprises an acrylic copolymer having active hydroxyl group and a cross-linking agent having a carbodiimide group.

Determination of the Scope and Content of the Prior Art (MPEP §2141.01)

Sasada et al. (utilizing a machine translation submitted with Office action) teach a antimicrobial composition for textiles of an antimicrobial fiber product (paragraph 1). The invention uses an antimicrobial composition of a polycarboxylic acid or its salt and a cross-linking agent. The antibacterial properties are excellent for use in textiles (paragraph 0004). Cross-linking agents taught include a carbodiimide cross-linking agent (paragraph 0004). Specific polycarboxylic acids taught include polyacrylic acid (paragraph 0007 and examples). It is taught that polycarbodiimide system resins are

produced by making a compound which has one functional group which can react to isocyanate groups such as a hydroxyl and an amino group (paragraph 008).

**Ascertainment of the Difference Between Scope the Prior Art and the Claims
(MPEP §2141.012)**

While Sasada et al. teach utilizing antimicrobial fiber containing a polycarboxylic acid, such as acrylic acid, with a carbodiimide cross-linking group, Sasada et al. do not teach the addition of an organic ester compound. However, this deficiency is cured by Long.

Long is directed to topical treatment for carpet and textiles. Exemplified compositions comprises both an antimicrobial component and an insecticide component such as Permethrin. It is taught that the combination improves the cleanliness or freshness of carpet and upholstery. By utilizing a antimicrobial component and an insecticide the resulting materials have the ability to resist growth of bacteria and fungi thereby maintaining the freshness of the materially and additionally the materially possess compound which kill dust mites or other pests which can insinuate themselves in the carpet or upholstery (pages 1-2).

**Finding of Prima Facie Obviousness Rationale and Motivation
(MPEP §2142-2143)**

It would have been obvious to one of ordinary skill in the art at the time of the instant invention to combine the teachings of Sasada et al. and Long and utilize Permethrin in the antimicrobial fibers of Sasada et al. One of ordinary skill in the art would have been motivated to add permethrin in order to kill pests which can insinuate themselves in textiles as taught by Long.

Absent any evidence to the contrary, and based upon the teachings of the prior art, there would have been a reasonable expectation of success in practicing the instantly claimed invention. Therefore, the invention as a whole would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made.

Claims 5 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Samson et al. in view of Air Products
(<http://www.airproducts.com/NR/rdonlyres/875C48B4-21A6-4FF4-B94C-40480EF2C9F2/0/ERFpaper401.pdf>, 2001).

Applicant Claims

The instant application claims the resin binder comprise an acrylic copolymer having active hydroxyl group and a cross-linking agent having carbodiimide group.

Determination of the Scope and Content of the Prior Art (MPEP §2141.01)

The teachings of Samson et al. are set forth above. Specifically, Samson et al. exemplify coating a tent with a composition comprising permethrin. Additionally, taught is the use of a coating of a film such as an acrylic or urethane.

Ascertainment of the Difference Between Scope the Prior Art and the Claims (MPEP §2141.012)

While Samson et al. teach the barrier can be made of an acrylic or urethane polymer, Samson et al. do not teach the use of a copolymer with a cross-linking agent which is a carbodiimide. However, this deficiency is cured by Air Products.

Air Products is directed to urethane-acrylic hybrid polymers. These polymers provide many of the benefits (abrasion resistance, superior mechanical properties and chemical resistance) of polyurethane dispersions but at a cost intermediate between polyurethane dispersions and low-cost acrylics (abstract). Due to the high cost of polyurethane dispersions, people mix the dispersion with acrylic polymers to reduce cost. However, this reduces the performance of the coating (page 2, second complete paragraph). The hybrid polymers are formed from acrylic monomers and urethane polymers (figure 1). Urethanes are formed from a diisocyanate (carbodiimide) and polyol (page 1). Table 6 lists suitable cross-linkers which include carbodiimides.

***Finding of Prima Facie Obviousness Rationale and Motivation
(MPEP §2142-2143)***

It would have been obvious to one of ordinary skill in the art at the time of the instant invention to combine the teachings of Samson et al. and Air Products and utilize a urethane-acrylic hybrid polymer in place of an acrylic or urethane coating. One of ordinary skill in the art would have been motivated to utilize this hybrid polymer as they provide many of the benefits of the urethane dispersions but not the cost. These hybrid polymers offer a cost/performance advantage over those taught in Samson et al. as taught by Air products.

Absent any evidence to the contrary, and based upon the teachings of the prior art, there would have been a reasonable expectation of success in practicing the instantly claimed invention. Therefore, the invention as a whole would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made.

Conclusion

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ABIGAIL FISHER whose telephone number is (571)270-3502. The examiner can normally be reached on M-Th 9am-6pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter can be reached on 571-272-0646. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Abigail Fisher
Examiner
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